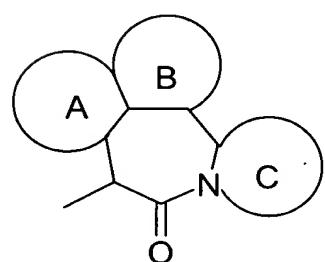
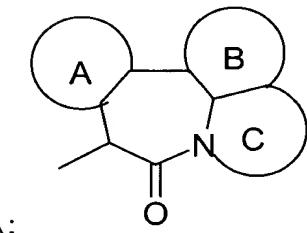
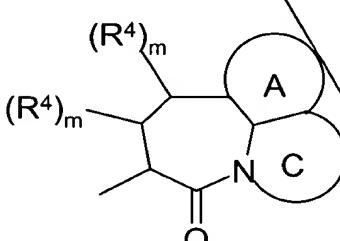
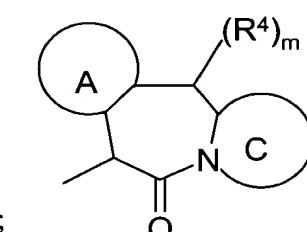
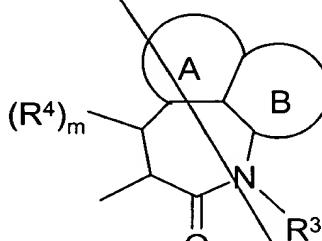
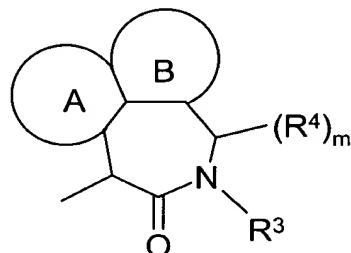
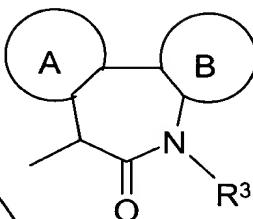
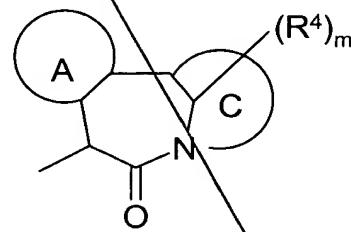


wherein

W is a substituted ϵ -caprolactam selected from the group consisting of:



and



wherein

~~ring A, together with the atoms of the ϵ -caprolactam to which it is attached, forms a carbocyclic or heterocyclic ring selected from the group consisting of:~~

Sub C 1

SI

- A) ~~aryl having from 6 to 14 ring carbon atoms substituted with from 1 to 5 substituents selected from the group consisting of:~~
 - 1) ~~acyloxy selected from alkyl-C(O)O-, substituted alkyl -C(O)O-, cycloalkyl-C(O)O-, substituted cycloalkyl-C(O)O-, aryl-C(O)O-, heteroaryl-C(O)O-, and heterocyclic-C(O)O- wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein cycloalkyl is defined in B herein; wherein substituted cycloalkyl is defined in C herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;~~
 - 2) ~~hydroxy;~~
 - 3) ~~acyl selected from alkyl-C(O)-, substituted alkyl-C(O)-, cycloalkyl-C(O)-, substituted cycloalkyl-C(O)-, aryl-C(O)-, heteroaryl-C(O)- and heterocyclic-C(O)- wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein cycloalkyl is defined in B herein; wherein substituted cycloalkyl is defined in C herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;~~
 - 4) ~~alkyl as defined in R herein;~~
 - 5) ~~alkoxy having the formula alkyl-O- wherein alkyl is defined in R herein;~~
 - 6) ~~alkenyl as defined in T herein;~~
 - 7) ~~alkynyl as defined in V herein;~~
 - 8) ~~substituted alkyl as defined in S herein;~~
 - 9) ~~substituted alkoxy of the formula substituted alkyl-O- where substituted alkyl is as defined in S herein;~~
 - 10) ~~substituted alkenyl as defined in U herein;~~
 - 11) ~~substituted alkynyl as defined in W herein;~~

*Sub
C
M*

12) amino having the formula -NH_2^- ;

13) substituted amino having the formula -N(R)_2 where each R is independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, cycloalkyl, substituted cycloalkyl, heteroaryl, heterocyclic and where both R groups are joined to form a heterocyclic group; wherein alkyl is defined in R herein; substituted alkyl is defined in S herein; wherein alkenyl is defined in T herein; wherein substituted alkenyl is defined in U herein; wherein alkynyl is defined in V herein; wherein substituted alkynyl is defined in W herein; wherein aryl is defined in A herein; wherein cycloalkyl is defined in B herein; wherein substituted cycloalkyl is defined in C herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

14) aminoacyl having the formula -NRC(O)R wherein each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl or heterocyclic; wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

15) acylamino having the formula -C(O)NRR where each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl, or heterocyclic or where both R groups are joined to form a heterocyclic group; wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

S v b
C1
B1

- 16) alkaryl of the formula -alkylene-aryl having 1 to 8 carbon atoms in the alkylene moiety wherein aryl is defined in A herein and alkylene is a divalent alkyl where alkyl is defined in R herein;
- 17) aryl as defined in A herein;
- 18) aryloxy having the formula -aryl-O wherein aryl is defined in A herein;
- 19) azido;
- 20) carboxyl;
- 21) carboxylalkyl having the formula -C(O)Oalkyl and -C(O)O-substituted alkyl wherein alkyl as defined in R herein and substituted alkyl is defined in S herein;
- 22) cyano;
- 23) halo selected from fluoro, chloro, bromo and iodo;
- 24) nitro;
- 25) heteroaryl as defined in F herein;
- 26) heterocyclic as defined in G herein;
- 27) aminoacyloxy having the formula -NRC(O)OR wherein each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl or heterocyclic; wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;
- 28) oxyacylamino having the formula -OC(O)NRR where each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl, or heterocyclic wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

Sub C

29) thioalkoxy having the formula -S-alkyl, wherein alkyl as defined in R herein;

30) substituted thioalkoxy having the formula -S-substituted alkyl, wherein substituted alkyl is defined in S herein;

31) thioaryloxy having the formula aryl-S- wherein aryl is defined in A herein;

32) thioheteroaryloxy having the formula heteroaryl-S- wherein heteroaryl is defined F herein;

33) -SO-alkyl wherein alkyl is defined in R herein;

34) -SO-substituted alkyl wherein substituted alkyl is defined in S herein;

35) -SO-aryl wherein aryl is defined in A herein;

36) -SO-heteroaryl wherein heteroaryl is defined in F herein;

37) -SO₂-alkyl wherein alkyl is defined in R herein;

38) -SO₂-substituted alkyl wherein substituted alkyl is defined in S herein;

39) -SO₂-aryl wherein aryl is defined in A herein;

40) -SO₂-heteroaryl wherein heteroaryl is defined in F herein; and

41) trihalomethyl wherein halo is defined in A23 herein;

B) cycloalkyl of from 3 to 12 carbon atoms;

C) substituted cycloalkyl having 3 to 12 carbon atoms and from 1 to 5 substituents selected from the group consisting of:

- 1) alkoxy as defined in A5 herein;
- 2) substituted alkoxy as defined in A9 herein;
- 3) cycloalkyl as defined in B herein;
- 4) substituted cycloalkyl as defined in C herein;
- 5) cycloalkenyl as defined in D herein;
- 6) substituted cycloalkenyl as defined in E herein;
- 7) acyl as defined in A3 herein;
- 8) acylamino as defined in A15 herein;
- 9) acyloxy as defined in A1 herein;

Svb
BH

- 10) amino as defined in A12 herein;
- 11) substituted amino as defined in A13 herein;
- 12) aminoacyl as defined in A14 herein;
- 13) aminoacyloxy as defined in A27 herein;
- 14) oxyacylamino as defined in A28 herein;
- 15) cyano;
- 16) halogen wherein halo is defined in A23 herein;
- 17) hydroxyl;
- 18) carboxyl;
- 19) carboxylalkyl as defined in A21 herein;
- 20) keto having the formula =O;
- 21) thioketo having the formula =S;
- 22) thiol having the formula -SH;
- 23) thioalkoxy as defined in A29 herein;
- 24) substituted thioalkoxy as defined in A30 herein;
- 25) aryl as defined in A herein;
- 26) aryloxy as defined in A18 herein;
- 27) heteroaryl as defined in F herein;
- 28) heteroaryloxy having the formula -O-heteroaryl wherein heteroaryl is defined in F herein;
- 29) heterocyclic as defined in G herein;
- 30) heterocyclooxy having the formula -O-heterocyclic wherein heterocyclic is defined in G herein;
- 31) hydroxyamino;
- 32) alkoxyamino wherein alkoxy is defined in A5 herein;
- 33) nitro;
- 34) -SO-alkyl as defined in A33 herein;
- 35) -SO-substituted alkyl as defined in A34 herein;
- 36) -SO-aryl as defined in A35 herein;

Svb

PF

- 37) -SO-heteroaryl as defined in A36 herein;
- 38) -SO₂-alkyl as defined in A37 herein;
- 39) -SO₂-substituted alkyl as defined in A38 herein;
- 40) -SO₂-aryl as defined in A39 herein; and
- 41) -SO₂-heteroaryl as defined in A40 herein;
- D) cycloalkenyl of from 4 to 8 carbon atoms;
- E) substituted cycloalkenyl having from 4 to 8 carbon atoms and from 1 to 5 substituents selected from the group consisting of:
 - 1) alkoxy as defined in A5 herein;
 - 2) substituted alkoxy as defined in A9 herein;
 - 3) cycloalkyl as defined in B herein;
 - 4) substituted cycloalkyl as defined in C herein;
 - 5) cycloalkenyl as defined in D herein;
 - 6) substituted cycloalkenyl as defined in E herein;
 - 7) acyl as defined in A3 herein;
 - 8) acylamino as defined in A15 herein;
 - 9) acyloxy as defined in A1 herein;
 - 10) amino as defined in A12 herein;
 - 11) substituted amino as defined in A13 herein;
 - 12) aminoacyl as defined in A14 herein;
 - 13) aminoacyloxy as defined in A27 herein;
 - 14) oxyacylamino as defined in A28 herein;
 - 15) cyano;
 - 16) halogen wherein halo is defined in A23 herein;
 - 17) hydroxyl;
 - 18) carboxyl;
 - 19) carboxylalkyl as defined in A21 herein;
 - 20) keto as defined in C20 herein;
 - 21) thioketo as defined in C21 herein;

S h C
B1

- 22) thiol as defined in C22 herein;
- 23) thioalkoxy as defined in A29 herein;
- 24) substituted thioalkoxy as defined in A30 herein;
- 25) aryl as defined in A herein;
- 26) aryloxy as defined in A18 herein;
- 27) heteroaryl as defined in F herein;
- 28) heteroaryloxy as defined in C28 herein;
- 29) heterocyclic as defined in G herein;
- 30) heterocyclooxy as defined in C30 herein;
- 31) hydroxyamino;
- 32) alkoxyamino as defined in C32 herein;
- 33) nitro;
- 34) -SO-alkyl as defined in A33 herein;
- 35) -SO-substituted alkyl as defined in A34 herein;
- 36) -SO-aryl as defined in A35 herein;
- 37) -SO-heteroaryl as defined in A36 herein;
- 38) -SO₂-alkyl as defined in A37 herein;
- 39) -SO₂-substituted alkyl as defined in A38 herein;
- 40) -SO₂-aryl as defined in A39 herein; and
- 41) -SO₂-heteroaryl as defined in A40 herein;

F) heteroaryl of from 1 to 15 ring carbon atoms and 1 to 4 ring heteroatoms selected from oxygen, nitrogen and sulfur, substituted with from 1 to 5 substituents selected from:

- 1) acyloxy as defined in A1 herein;
- 2) hydroxy;
- 3) acyl as defined in A3 herein;
- 4) alkyl as defined in R herein;
- 5) alkoxy as defined in A5 herein;
- 6) alkenyl as defined in T herein;

7) alkynyl as defined in V herein;
8) substituted alkyl as defined in S herein;
9) substituted alkoxy as defined in A9 herein;
10) substituted alkenyl as defined in U herein;
11) substituted alkynyl as defined in W herein;
12) amino as defined in A12 herein;
13) substituted amino as defined in A13 herein;
14) aminoacyl as defined in A14 herein;
15) acylamino as defined in A15 herein;
16) alkaryl as defined in A16 herein;
17) aryl as defined in A herein;
18) aryloxy as defined in A18 herein;
19) azido;
20) carboxyl;
21) carboxylalkyl as defined in A21 herein;
22) cyano;
23) halo as defined in A23 herein;
24) nitro;
25) heteroaryl as defined in F herein;
26) heterocyclic as defined in G herein;
27) aminoacyloxy as defined in A27 herein;
28) oxyacylamino as defined in A28 herein;
29) thioalkoxy as defined in A29 herein;
30) substituted thioalkoxy as defined in A30 herein;
31) thioaryloxy as defined in A31 herein;
32) thioheteroaryloxy as defined in A32 herein;
33) -SO-alkyl as defined in A33 herein;
34) -SO-substituted alkyl as defined in A34 herein;
35) -SO-aryl as defined in A35 herein;

- 36) -SO-heteroaryl as defined in A36 herein;
- 37) -SO₂-alkyl as defined in A37 herein;
- 38) -SO₂-substituted alkyl as defined in A38 herein;
- 39) -SO₂-aryl as defined in A39 herein;
- 40) -SO₂-heteroaryl as defined in A40 herein; and
- 41) trihalomethyl as defined in A41 herein;

G) heterocyclic of from 1 to 15 ring carbon atoms and from 1 to 4 ring atoms selected from nitrogen, sulfur and oxygen, substituted with from 1 to 5 substituents selected from:

- 1) alkoxy as defined in A5 herein;
- 2) substituted alkoxy as defined in A9 herein;
- 3) cycloalkyl as defined in B herein;
- 4) substituted cycloalkyl as defined in C herein;
- 5) cycloalkenyl as defined in D herein;
- 6) substituted cycloalkenyl as defined in E herein;
- 7) acyl as defined in A3 herein;
- 8) acylamino as defined in A15 herein;
- 9) acyloxy as defined in A1 herein;
- 10) amino as defined in A12 herein;
- 11) substituted amino as defined in A13 herein;
- 12) aminoacyl as defined in A14 herein;
- 13) aminoacyloxy as defined in A27 herein;
- 14) oxyacylamino as defined in A28 herein;
- 15) cyano;
- 16) halogen wherein halo is defined in A23 herein;
- 17) hydroxyl;
- 18) carboxyl;
- 19) carboxylalkyl as defined in A21 herein;
- 20) keto as defined in C20 herein;

S v C

B1

- 21) thioketo as defined in C21 herein;
- 22) thiol as defined in C22 herein;
- 23) thioalkoxy as defined in A29 herein;
- 24) substituted thioalkoxy as defined in A30 herein;
- 25) aryl as defined in A herein;
- 26) aryloxy as defined in A18 herein;
- 27) heteroaryl as defined in F herein;
- 28) heteroaryloxy as defined in C28 herein;
- 29) heterocyclic as defined in G herein;
- 30) heterocyclooxy as defined in C30 herein;
- 31) hydroxyamino;
- 32) alkoxyamino as defined in C32 herein;
- 33) nitro;
- 34) -SO-alkyl as defined in A33 herein;
- 35) -SO-substituted alkyl as defined in A34 herein;
- 36) -SO-aryl as defined in A35 herein;
- 37) -SO-heteroaryl as defined in A36 herein;
- 38) -SO₂-alkyl as defined in A37 herein;
- 39) -SO₂-substituted alkyl as defined in A38 herein;
- 40) -SO₂-aryl as defined in A39 herein; and
- 41) -SO₂-heteroaryl as defined in A40 herein;

ring B, together with the atoms of the ϵ -caprolactam to which it is attached, forms a carbocyclic or heterocyclic ring selected from the group consisting of:

- H) aryl as defined in A herein;
- I) cycloalkyl as defined in B herein;
- J) substituted cycloalkyl as defined in C herein;
- K) cycloalkenyl as defined in D herein;
- L) substituted cycloalkenyl as defined in E herein;
- M) heteroaryl as defined in F herein; and

~~N) heterocyclic as defined in G herein;
ring C, together with the atoms of the ϵ -caprolactam to which it is attached, forms a
heteroaryl as defined in F herein or heterocyclic ring as defined in G herein;~~

~~R¹ is selected from the group consisting of:~~

~~O) hydrogen; and~~

~~P) an amino-blocking group being any group, bound to an amino group, which
prevents undesired reactions from occurring at the amino group and which
may be removed by conventional chemical and/or enzymatic procedures to
reestablish the amino group;~~

~~R² is selected from the group consisting of:~~

~~Q) hydrogen;~~

~~R) alkyl of from 1 to 20 carbon atoms;~~

~~S) substituted alkyl of from 1 to 20 carbon atoms, having from 1 to 5
substituents selected from:~~

- ~~1) alkoxy as defined in A5 herein;~~
- ~~2) substituted alkoxy as defined in A9 herein;~~
- ~~3) cycloalkyl as defined in B herein;~~
- ~~4) substituted cycloalkyl as defined in C herein;~~
- ~~5) cycloalkenyl as defined in D herein;~~
- ~~6) substituted cycloalkenyl as defined in E herein;~~
- ~~7) acyl as defined in A3 herein;~~
- ~~8) acylamino as defined in A15 herein;~~
- ~~9) acyloxy as defined in A1 herein;~~
- ~~10) amino as defined in A12 herein;~~
- ~~11) substituted amino as defined in A13 herein;~~
- ~~12) aminoacyl as defined in A14 herein;~~
- ~~13) aminoacyloxy as defined in A27 herein;~~
- ~~14) oxyacylamino as defined in A28 herein;~~
- ~~15) cyano;~~

Suh C'

B1

- 16) halogen wherein halo is defined in A23 herein;
- 17) hydroxyl;
- 18) carboxyl;
- 19) carboxylalkyl as defined in A21 herein;
- 20) keto as defined in C20 herein;
- 21) thioketo as defined in C21 herein;
- 22) thiol as defined in C22 herein;
- 23) thioalkoxy as defined in A29 herein;
- 24) substituted thioalkoxy as defined in A30 herein;
- 25) aryl as defined in A herein;
- 26) aryloxy as defined in A18 herein;
- 27) heteroaryl as defined in F herein;
- 28) heteroaryloxy as defined in C28 herein;
- 29) heterocyclic as defined in G herein;
- 30) heterocyclooxy as defined in C30 herein;
- 31) hydroxyamino;
- 32) alkoxyamino as defined in C32 herein;
- 33) nitro;
- 34) -SO-alkyl as defined in A33 herein;
- 35) -SO-substituted alkyl as defined in A34 herein;
- 36) -SO-aryl as defined in A35 herein;
- 37) -SO-heteroaryl as defined in A36 herein;
- 38) -SO₂-alkyl as defined in A37 herein;
- 39) -SO₂-substituted alkyl as defined in A38 herein;
- 40) -SO₂-aryl as defined in A39 herein; and
- 41) -SO₂-heteroaryl as defined in A40 herein;

T) alkenyl of from 2 to 10 carbon atoms and 1-2 sites of alkenyl unsaturation;

U) substituted alkenyl having from 1 to 3 substituents selected from the group consisting of:

*Sub
C'*

BR

- 1) alkoxy as defined in A5 herein;
- 2) substituted alkoxy as defined in A9 herein;
- 3) cycloalkyl as defined in B herein;
- 4) substituted cycloalkyl as defined in C herein;
- 5) cycloalkoxy wherein alkoxy is defined in A5 herein ;
- 6) substituted cycloalkoxyl wherein substituted alkoxy is defined in A9 herein;
- 7) acyl as defined in A3 herein;
- 8) acylamino as defined in A15 herein;
- 9) acyloxy as defined in A1 herein;
- 10) amino as defined in A12 herein;
- 11) substituted amino as defined in A13 herein;
- 12) aminoacyl as defined in A14 herein;
- 13) aminoacyloxy as defined in A27 herein;
- 14) cyano;
- 15) halogen wherein halo is defined in A23 herein;
- 16) hydroxyl;
- 17) carboxyl;
- 18) carboxylalkyl as defined in A21 herein;
- 19) keto as defined in C20 herein;
- 20) thioketo as defined in C21 herein;
- 21) thiol as defined in C22 herein;
- 22) thioalkoxy as defined in A29 herein;
- 23) substituted thioalkoxy as defined in A30 herein;
- 24) aryl as defined in A herein;
- 25) heteroaryl as defined in F herein;
- 26) heterocyclic as defined in G herein;
- 27) heterocyclooxy as defined in C30 herein;
- 28) nitro;

Sub C

BT

- 29) -SO-alkyl as defined in A33 herein;
- 30) -SO-substituted alkyl as defined in A34 herein;
- 31) -SO-aryl as defined in A35 herein;
- 32) -SO-heteroaryl as defined in A36 herein;
- 33) -SO₂-alkyl as defined in A37 herein;
- 34) -SO₂-substituted alkyl as defined in A38 herein;
- 35) -SO₂-aryl as defined in A39 herein; and
- 36) -SO₂-heteroaryl as defined in A40 herein;

V) alkynyl of from 2 to 10 carbon atoms and from 1-2 sites of alkynyl unsaturation;

W) substituted alkynyl of from 1 to 3 substituents selected from:

- 1) alkoxy as defined in A5 herein;
- 2) substituted alkoxy as defined in A9 herein;
- 3) cycloalkyl as defined in B herein;
- 4) substituted cycloalkyl as defined in C herein;
- 5) cycloalkoxy as defined in U5 herein;
- 6) substituted cycloalkoxyl as defined in U6 herein;
- 7) acyl as defined in A3 herein;
- 8) acylamino as defined in A15 herein;
- 9) acyloxy as defined in A1 herein;
- 10) amino as defined in A12 herein;
- 11) substituted amino as defined in A13 herein;
- 12) aminoacyl as defined in A14 herein;
- 13) aminoacyloxy as defined in A27 herein;
- 14) cyano;
- 15) halogen wherein halo is defined in A23 herein;
- 16) hydroxyl;
- 17) carboxyl;
- 18) carboxylalkyl as defined in A21 herein;

*Sub
C'*

B/

- 19) keto as defined in C20 herein;
- 20) thioketo as defined as C21 herein;
- 21) thiol as defined as C22 herein;
- 22) thioalkoxy as defined in A29 herein;
- 23) substituted thioalkoxy as defined in A30 herein;
- 24) aryl as defined in A herein;
- 25) heteroaryl as defined in F herein;
- 26) heterocyclic as defined in G herein;
- 27) heterocyclooxy as defined in C30 herein;
- 28) nitro;
- 29) -SO-alkyl as defined in A33 herein;
- 30) -SO-substituted alkyl as defined in A34 herein;
- 31) -SO-aryl as defined in A35 herein;
- 32) -SO-heteroaryl as defined in A36 herein;
- 33) -SO₂-alkyl as defined in A37 herein;
- 34) -SO₂-substituted alkyl as defined in A38 herein;
- 35) -SO₂-aryl as defined in A39 herein; and
- 36) -SO₂-heteroaryl as defined in A40 herein;

- X) aryl as defined in A herein;
- Y) cycloalkyl as defined in B herein;
- Z) heteroaryl as defined in F herein; and
- AA) heterocyclic as defined in G herein;

R³ is selected from the group consisting of:

- BB) hydrogen;
- CC) alkyl as defined in R herein;
- DD) substituted alkyl as defined in S herein;
- EE) alkenyl as defined in T herein;
- FF) substituted alkenyl as defined in U herein;
- GG) alkynyl as defined in V herein;

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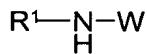
- HH) substituted alkynyl as defined in W herein;
- II) acyl as defined in A3 herein;
- JJ) aryl as defined in A herein;
- KK) cycloalkyl as defined in B herein;
- LL) substituted cycloalkyl as defined in C herein;
- MM) cycloalkenyl as defined in D herein;
- NN) substituted cycloalkenyl as defined in E herein;
- OO) heteroaryl as defined in F herein; and
- PP) heterocyclic as defined in G herein;

each R⁴ is independently selected from the group consisting of:

- QQ) alkyl as defined in R herein;
- RR) substituted alkyl as defined in S herein;
- SS) alkenyl as defined in T herein;
- TT) substituted alkenyl as defined in U herein;
- UU) alkynyl as defined in V herein;
- VV) substituted alkynyl as defined in W herein;
- WW) aryl as defined in A herein;
- XX) cycloalkyl as defined in B herein;
- YY) substituted cycloalkyl as defined in C herein;
- ZZ) cycloalkenyl as defined in D herein;
- AAA) substituted cycloalkenyl as defined in E herein;
- BBB) heteroaryl as defined in F herein; and
- CCC) heterocyclic as defined in G herein;

m is an integer from 0 to 2; and salts thereof.

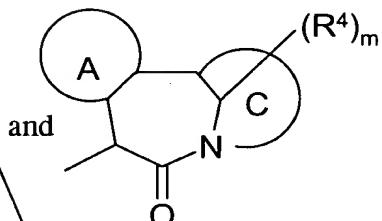
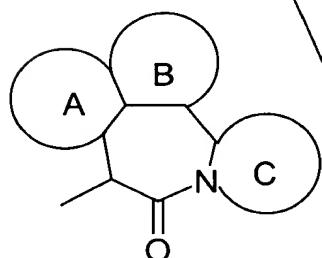
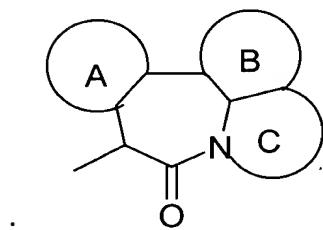
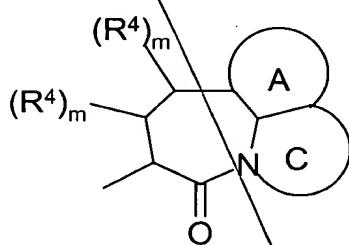
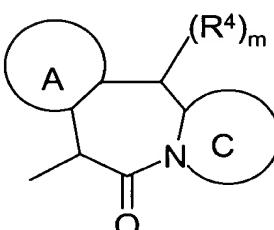
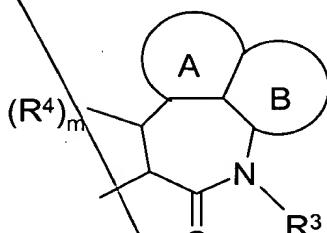
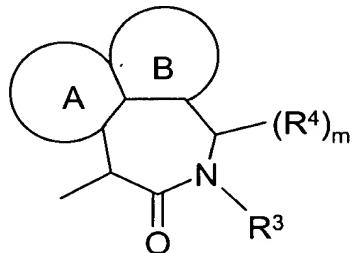
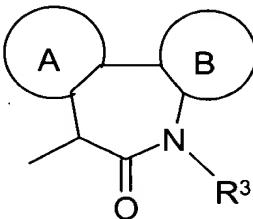
64. (Amended) A compound of formula II:



II

wherein

W is a substituted ϵ -caprolactam selected from the group consisting of:



wherein

ring *A*, together with the atoms of the ϵ -caprolactam to which it is attached, forms a carbocyclic or heterocyclic ring selected from the group consisting of:

A) aryl having from 6 to 14 ring carbon atoms substituted with from 1 to 5 substituents selected from the group consisting of:

1) acyloxy selected from alkyl-C(O)O-, substituted alkyl -C(O)O-, cycloalkyl-C(O)O-, substituted cycloalkyl-C(O)O-, aryl-C(O)O-, heteroaryl-C(O)O-, and heterocyclic-C(O)O- wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein cycloalkyl is defined in B herein; wherein substituted cycloalkyl is defined in C herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

2) hydroxy;

3) acyl selected from alkyl-C(O)-, substituted alkyl-C(O)-, cycloalkyl-C(O)-, substituted cycloalkyl-C(O)-, aryl-C(O)-, heteroaryl-C(O)- and heterocyclic-C(O)- wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein cycloalkyl is defined in B herein; wherein substituted cycloalkyl is defined in C herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

4) alkyl as defined in R herein;

5) alkoxy having the formula alkyl-O- wherein alkyl is defined in R herein;

6) alkenyl as defined in T herein;

7) alkynyl as defined in V herein;

8) substituted alkyl as defined in S herein;

9) substituted alkoxy of the formula substituted alkyl-O- where substituted alkyl is as defined in S herein;

10) substituted alkenyl as defined in U herein;

11) substituted alkynyl as defined in W herein;

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- 12) amino having the formula -NH₂-;
- 13) substituted amino having the formula -N(R)₂ where each R is independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, cycloalkyl, substituted cycloalkyl, heteroaryl, heterocyclic and where both R groups are joined to form a heterocyclic group; wherein alkyl is defined in R herein; substituted alkyl is defined in S herein; wherein alkenyl is defined in T herein; wherein substituted alkenyl is defined in U herein; wherein alkynyl is defined in V herein; wherein substituted alkynyl is defined in W herein; wherein aryl is defined in A herein; wherein cycloalkyl is defined in B herein; wherein substituted cycloalkyl is defined in C herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;
- 14) aminoacyl having the formula -NRC(O)R wherein each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl or heterocyclic; wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;
- 15) acylamino having the formula -C(O)NRR where each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl, or heterocyclic or where both R groups are joined to form a heterocyclic group; wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

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- 16) alkaryl of the formula -alkylene-aryl having 1 to 8 carbon atoms in the alkylene moiety wherein aryl is defined in A herein and alkylene is a divalent alkyl where alkyl is defined in R herein;
- 17) aryl as defined in A herein;
- 18) aryloxy having the formula -aryl-O wherein aryl is defined in A herein;
- 19) azido;
- 20) carboxyl;
- 21) carboxylalkyl having the formula -C(O)Oalkyl and -C(O)O-substituted alkyl wherein alkyl as defined in R herein and substituted alkyl is defined in S herein;
- 22) cyano;
- 23) halo selected from fluoro, chloro, bromo and iodo;
- 24) nitro;
- 25) heteroaryl as defined in F herein;
- 26) heterocyclic as defined in G herein;
- 27) aminoacyloxy having the formula -NRC(O)OR wherein each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl or heterocyclic; wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;
- 28) oxyacylamino having the formula -OC(O)NRR where each R is independently hydrogen, alkyl, substituted alkyl, aryl, heteroaryl, or heterocyclic wherein alkyl is defined in R herein; wherein substituted alkyl is defined in S herein; wherein aryl is defined in A herein; wherein heteroaryl is defined in F herein; and wherein heterocyclic is defined in G herein;

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- 29) thioalkoxy having the formula -S-alkyl, wherein alkyl as defined in R herein;
- 30) substituted thioalkoxy having the formula -S-substituted alkyl, wherein substituted alkyl is defined in S herein;
- 31) thioaryloxy having the formula aryl-S- wherein aryl is defined in A herein;
- 32) thioheteroaryloxy having the formula heteroaryl-S- wherein heteroaryl is defined F herein;
- 33) -SO-alkyl wherein alkyl is defined in R herein;
- 34) -SO-substituted alkyl wherein substituted alkyl is defined in S herein;
- 35) -SO-aryl wherein aryl is defined in A herein;
- 36) -SO-heteroaryl wherein heteroaryl is defined in F herein;
- 37) -SO₂-alkyl wherein alkyl is defined in R herein;
- 38) -SO₂-substituted alkyl wherein substituted alkyl is defined in S herein;
- 39) -SO₂-aryl wherein aryl is defined in A herein;
- 40) -SO₂-heteroaryl wherein heteroaryl is defined in F herein; and
- 41) trihalomethyl wherein halo is defined in A23 herein;

B) cycloalkyl of from 3 to 12 carbon atoms;

C) substituted cycloalkyl having 3 to 12 carbon atoms and from 1 to 5 substituents selected from the group consisting of:

- 1) alkoxy as defined in A5 herein;
- 2) substituted alkoxy as defined in A9 herein;
- 3) cycloalkyl as defined in B herein;
- 4) substituted cycloalkyl as defined in C herein;
- 5) cycloalkenyl as defined in D herein;
- 6) substituted cycloalkenyl as defined in E herein;
- 7) acyl as defined in A3 herein;

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- 8) acylamino as defined in A15 herein;
- 9) acyloxy as defined in A1 herein;
- 10) amino as defined in A12 herein;
- 11) substituted amino as defined in A13 herein;
- 12) aminoacyl as defined in A14 herein;
- 13) aminoacyloxy as defined in A27 herein;
- 14) oxyacylamino as defined in A28 herein;
- 15) cyano;
- 16) halogen wherein halo is defined in A23 herein;
- 17) hydroxyl;
- 18) carboxyl;
- 19) carboxylalkyl as defined in A21 herein;
- 20) keto having the formula =O;
- 21) thioketo having the formula =S;
- 22) thiol having the formula -SH;
- 23) thioalkoxy as defined in A29 herein;
- 24) substituted thioalkoxy as defined in A30 herein;
- 25) aryl as defined in A herein;
- 26) aryloxy as defined in A18 herein;
- 27) heteroaryl as defined in F herein;
- 28) heteroaryloxy having the formula -O-heteroaryl wherein heteroaryl is defined in F herein;
- 29) heterocyclic as defined in G herein;
- 30) heterocyclooxy having the formula -O-heterocyclic wherein heterocyclic is defined in G herein;
- 31) hydroxyamino;
- 32) alkoxyamino wherein alkoxy is defined in A5 herein;
- 33) nitro;
- 34) -SO-alkyl as defined in A33 herein;

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- 35) -SO₂-substituted alkyl as defined in A34 herein;
- 36) -SO₂-aryl as defined in A35 herein;
- 37) -SO₂-heteroaryl as defined in A36 herein;
- 38) -SO₂-alkyl as defined in A37 herein;
- 39) -SO₂-substituted alkyl as defined in A38 herein;
- 40) -SO₂-aryl as defined in A39 herein; and
- 41) -SO₂-heteroaryl as defined in A40 herein;

D) cycloalkenyl of from 4 to 8 carbon atoms;

E) substituted cycloalkenyl having from 4 to 8 carbon atoms and from 1 to 5 substituents selected from the group consisting of:

- 1) alkoxy as defined in A5 herein;
- 2) substituted alkoxy as defined in A9 herein;
- 3) cycloalkyl as defined in B herein;
- 4) substituted cycloalkyl as defined in C herein;
- 5) cycloalkenyl as defined in D herein;
- 6) substituted cycloalkenyl as defined in E herein;
- 7) acyl as defined in A3 herein;
- 8) acylamino as defined in A15 herein;
- 9) acyloxy as defined in A1 herein;
- 10) amino as defined in A12 herein;
- 11) substituted amino as defined in A13 herein;
- 12) aminoacyl as defined in A14 herein;
- 13) aminoacyloxy as defined in A27 herein;
- 14) oxyacylamino as defined in A28 herein;
- 15) cyano;
- 16) halogen wherein halo is defined in A23 herein;
- 17) hydroxyl;
- 18) carboxyl;
- 19) carboxylalkyl as defined in A21 herein;

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- 20) keto as defined in C20 herein;
- 21) thioketo as defined in C21 herein;
- 22) thiol as defined in C22 herein;
- 23) thioalkoxy as defined in A29 herein;
- 24) substituted thioalkoxy as defined in A30 herein;
- 25) aryl as defined in A herein;
- 26) aryloxy as defined in A18 herein;
- 27) heteroaryl as defined in F herein;
- 28) heteroaryloxy as defined in C28 herein;
- 29) heterocyclic as defined in G herein;
- 30) heterocyclooxy as defined in C30 herein;
- 31) hydroxyamino;
- 32) alkoxyamino as defined in C32 herein;
- 33) nitro;
- 34) -SO-alkyl as defined in A33 herein;
- 35) -SO-substituted alkyl as defined in A34 herein;
- 36) -SO-aryl as defined in A35 herein;
- 37) -SO-heteroaryl as defined in A36 herein;
- 38) -SO₂-alkyl as defined in A37 herein;
- 39) -SO₂-substituted alkyl as defined in A38 herein;
- 40) -SO₂-aryl as defined in A39 herein; and
- 41) -SO₂-heteroaryl as defined in A40 herein;

F) heteroaryl of from 1 to 15 ring carbon atoms and 1 to 4 ring heteroatoms selected from oxygen, nitrogen and sulfur, substituted with from 1 to 5 substituents selected from:

- 1) acyloxy as defined in A1 herein;
- 2) hydroxy;
- 3) acyl as defined in A3 herein;
- 4) alkyl as defined in R herein;

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- 5) alkoxy as defined in A5 herein;
- 6) alkenyl as defined in T herein;
- 7) alkynyl as defined in V herein;
- 8) substituted alkyl as defined in S herein;
- 9) substituted alkoxy as defined in A9 herein;
- 10) substituted alkenyl as defined in U herein;
- 11) substituted alkynyl as defined in W herein;
- 12) amino as defined in A12 herein;
- 13) substituted amino as defined in A13 herein;
- 14) aminoacyl as defined in A14 herein;
- 15) acylamino as defined in A15 herein;
- 16) alkaryl as defined in A16 herein;
- 17) aryl as defined in A herein;
- 18) aryloxy as defined in A18 herein;
- 19) azido;
- 20) carboxyl;
- 21) carboxylalkyl as defined in A21 herein;
- 22) cyano;
- 23) halo as defined in A23 herein;
- 24) nitro;
- 25) heteroaryl as defined in F herein;
- 26) heterocyclic as defined in G herein;
- 27) aminoacyloxy as defined in A27 herein;
- 28) oxyacylamino as defined in A28 herein;
- 29) thioalkoxy as defined in A29 herein;
- 30) substituted thioalkoxy as defined in A30 herein;
- 31) thioaryloxy as defined in A31 herein;
- 32) thioheteroaryloxy as defined in A32 herein;
- 33) -SO-alkyl as defined in A33 herein;

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34) -SO-substituted alkyl as defined in A34 herein;
35) -SO-aryl as defined in A35 herein;
36) -SO-heteroaryl as defined in A36 herein;
37) -SO₂-alkyl as defined in A37 herein;
38) -SO₂-substituted alkyl as defined in A38 herein;
39) -SO₂-aryl as defined in A39 herein;
40) -SO₂-heteroaryl as defined in A40 herein; and
41) trihalomethyl as defined in A41 herein;

G) heterocyclic of from 1 to 15 ring carbon atoms and from 1 to 4 ring atoms selected from nitrogen, sulfur and oxygen, substituted with from 1 to 5 substituents selected from:

- 1) alkoxy as defined in A5 herein;
- 2) substituted alkoxy as defined in A9 herein;
- 3) cycloalkyl as defined in B herein;
- 4) substituted cycloalkyl as defined in C herein;
- 5) cycloalkenyl as defined in D herein;
- 6) substituted cycloalkenyl as defined in E herein;
- 7) acyl as defined in A3 herein;
- 8) acylamino as defined in A15 herein;
- 9) acyloxy as defined in A1 herein;
- 10) amino as defined in A12 herein;
- 11) substituted amino as defined in A13 herein;
- 12) aminoacyl as defined in A14 herein;
- 13) aminoacyloxy as defined in A27 herein;
- 14) oxyacylamino as defined in A28 herein;
- 15) cyano;
- 16) halogen wherein halo is defined in A23 herein;
- 17) hydroxyl;
- 18) carboxyl;

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- 19) carboxylalkyl as defined in A21 herein;
- 20) keto as defined in C20 herein;
- 21) thioketo as defined in C21 herein;
- 22) thiol as defined in C22 herein;
- 23) thioalkoxy as defined in A29 herein;
- 24) substituted thioalkoxy as defined in A30 herein;
- 25) aryl as defined in A herein;
- 26) aryloxy as defined in A18 herein;
- 27) heteroaryl as defined in F herein;
- 28) heteroaryloxy as defined in C28 herein;
- 29) heterocyclic as defined in G herein;
- 30) heterocyclooxy as defined in C30 herein;
- 31) hydroxyamino;
- 32) alkoxyamino as defined in C32 herein;
- 33) nitro;
- 34) -SO-alkyl as defined in A33 herein;
- 35) -SO-substituted alkyl as defined in A34 herein;
- 36) -SO-aryl as defined in A35 herein;
- 37) -SO-heteroaryl as defined in A36 herein;
- 38) -SO₂-alkyl as defined in A37 herein;
- 39) -SO₂-substituted alkyl as defined in A38 herein;
- 40) -SO₂-aryl as defined in A39 herein; and
- 41) -SO₂-heteroaryl as defined in A40 herein;

ring B, together with the atoms of the ϵ -caprolactam to which it is attached, forms a carbocyclic or heterocyclic ring selected from the group consisting of:

- H) aryl as defined in A herein;
- I) cycloalkyl as defined in B herein;
- J) substituted cycloalkyl as defined in C herein;
- K) cycloalkenyl as defined in D herein;

L) substituted cycloalkenyl as defined in E herein;
M) heteroaryl as defined in F herein; and
N) heterocyclic as defined in G herein;
ring C, together with the atoms of the ϵ -caprolactam to which it is attached, forms a heteroaryl as defined in F herein or heterocyclic ring as defined in G herein;

R¹ is selected from the group consisting of:

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O) hydrogen; and
P) an amino-blocking group being any group, bound to an amino group, which prevents undesired reactions from occurring at the amino group and which may be removed by conventional chemical and/or enzymatic procedures to reestablish the amino group;

R³ is selected from the group consisting of:

Q) hydrogen;
R) alkyl as defined in R herein;
S) substituted alkyl as defined in S herein;
T) alkenyl as defined in T herein;
U) substituted alkenyl as defined in U herein;
V) alkynyl as defined in V herein;
W) substituted alkynyl as defined in W herein;
X) acyl as defined in A3 herein;
Y) aryl as defined in A herein;
Z) cycloalkyl as defined in B herein;
AA) substituted cycloalkyl as defined in C herein;
BB) cycloalkenyl as defined in D herein;
CC) substituted cycloalkenyl as defined in E herein;
DD) heteroaryl as defined in F herein; and
EE) heterocyclic as defined in G herein;

each R⁴ is independently selected from the group consisting of:

FF) alkyl as defined in R herein;

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~~GG) substituted alkyl as defined in S herein;~~

~~HH) alkenyl as defined in T herein;~~

~~II) substituted alkenyl as defined in U herein;~~

~~JJ) alkynyl as defined in V herein;~~

~~KK) substituted alkynyl as defined in W herein;~~

~~LL) aryl as defined in A herein;~~

~~MM) cycloalkyl as defined in B herein;~~

~~NN) substituted cycloalkyl as defined in C herein;~~

~~OO) cycloalkenyl as defined in D herein;~~

~~PP) substituted cycloalkenyl as defined in E herein;~~

~~QQ) heteroaryl as defined in F herein; and~~

~~RR) heterocyclic as defined in G herein;~~

m is an integer from 0 to 2; and salts thereof.